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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,102	12/29/2000	Christian E. Elling	45579-0001	8238

21874 7590 08/26/2004

EDWARDS & ANGELL, LLP
P.O. BOX 55874
BOSTON, MA 02205

EXAMINER	
SHIBUYA, MARK LANCE	
ART UNIT	**PAPER NUMBER**
1639	

DATE MAILED: 08/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/752,102	ELLING ET AL.	
	Examiner	Art Unit	
	Mark L. Shibuya	1639	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 June 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-79* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *7-18,20,21,25-46&52* is/are objected to.

8)☒ Claim(s) *1-79* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-79 are pending and subject to the instant restriction/election of species. Claims 7-18, 20, 21, 25-46 and 52 are objected to. Claims 1-6, 19, 22-24, 47-51, and 53-79 are *not* objected to for improper multiple dependency.

2. In the previous Requirement for Restriction/Election, mailed 5/4/2004, claims 5-46, 52-66, 72-76 and 79 were objected to for being improperly multiply dependent. In applicant's Remarks, filed 6/7/2004, applicant stated that claims 7-15, 17-22, 25-28, 31, 49, 52-56, 65-66, 70, 72-73, 76 and 79 had been amended to correct for dependencies and requested that these claims be considered for restriction. However, claims 7-18, 20, 21, 25-46 and 52 are objected to because said claims remain improperly multiply dependent. As requested by applicant, all claims are restricted herein, including those claims that are objected to. The examiner has restricted all claims, even if a claim is objected to.

3. Therefore, the Requirement for Election/Restriction, mailed 5/4/2004, is hereby withdrawn and the instant Requirement for Election/Restriction, 5/4/2004, is newly set forth.

4. Applicant's election with traverse of Group I, (claims 1, 2, 3, and 6), in the reply filed on 6/7/2004 is acknowledged. The traversal is on the ground(s) that

consideration and examination should not impose an undue burden. This is not found persuasive because the inventions of the groups are independent or distinct for the reasons given in the Requirement for Restriction/Election, mailed 5/4/2004, and it would be necessary to search for each one of the distinct subjects in places where no art pertinent to each of the other subject exists. See MPEP 808.02.

Claim Objections

Claims 7-18, 20, 21, 25-46 and 52 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim and should refer to other claims in the alternative only. See MPEP § 608.01(n). It is noted that claim 6 is a multiple dependent claim.

Election/Restrictions

Restriction of Inventions

5. The applicant is invited to note that claims 1, 2, 3, 6, **8, 9, 11, 12, 15-19, 21, 31-40, 41-46,** and **53-66** are listed as "Group I, etc." and claims 67, 68, 70, and 71 are listed as "Group IV, etc." but in actuality contain within those claims a large number of separate and distinct inventions. If claims 1, 2, 3, 6, **8, 9, 11, 12, 15-19, 21, 31-40, 41-46,** and **53-66** of Group I, etc., or 67, 68, 70, and 71 of Group IV, etc., are elected, election of a *single invention* from within this group of claims is required as specifically set forth (see Group I, etc., and IV, etc., below).

6. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I, etc. Claims 1, 2, 3, 6, **8, 9, 11, 12, 15-19, 21, 31-40, 41-46,** and **53-66,** drawn to a drug discovery process for identification of a small organic compound comprising mutating a biological target and further comprising contacting the mutated biological target with one or more members of a library of test compounds comprising at least two heteroatoms for chelating a metal ion, classifiable in class 435, subclass 471, for example.

It is noted that claims 56-62 contain a large number of independent and distinct inventions. If this group is selected, then election of a single invention wherein the following symbols of formula X are defined is required:

F, G, X, n, Y, m, Z, e, V, f, W, g, A, B, T, Q, d, f, h, P, s, t, r, u, must all be specifically defined, as appropriate.

Each of F, G, X, n, Y, m, Z, e, V, f, W, g, A, B, T, Q, d, f, h, P, s, t, r, u, must be specifically set forth where the specific structure (cyclic, non-cyclic) is shown and all variable groups are defined therein, according to the limitations found in claims 56-62, as appropriate. Furthermore, if applicant elects a compound of the formulae IIIA-XIc, applicant must clearly state which formula applicant has

elected. Applicant's election under this restriction requirement should result in a *single* defined cyclic core structure showing all rings therein, which are further functionalized by the R^1, R^2, R', R3, R4, and R5, as set forth in claims 56-62.

II. Claims 4, 5, 6, **7, 10, 13, 14, 26,** and **27,** drawn to a drug discovery process for identification of a small organic compound comprising a biological target molecule with at least one metal ion binding site further comprising contacting the biological target with a test compound one or more members of a library of test compounds comprising at least two heteroatoms for chelating a metal ion, classifiable in class 435, subclass 4, for example.

III. Claims 47-51, and **52**, drawn to Claims 47-51, 77 and 78, drawn to a method of identifying a metal ion binding site in a biological target molecule, including a protein, and to characterizing an orphan receptor, comprising contacting a test compound comprising at least two heteroatoms for chelating a metal ion, classifiable in class 435, subclass 7.1, for example.

IV, etc. Claims 67, 68, 70, 71 and **72**, drawn to a chemical library comprising a plurality of test compounds of the general formula I, classifiable in class 514, subclass 75, 184, for example.

It is noted that claims 67, 68, 70, and 71 contain a large number of independent and distinct inventions. If this group is selected, then election of a single invention wherein the following symbols of formula I are defined is required:

F, G, X, n, Y, and m must all be specifically defined.

Each of F, G, X, n, Y, and m must be specifically set forth where the specific structure (cyclic, non-cyclic) is shown and all variable groups are defined therein; wherein F is either N, O, S, Se or P; G is either N, O, S, Se or P, and so on in turn for X, n, Y, and m, according to the limitations found in claims 67, 68, 70 and 71. Applicant's election under this restriction requirement should result in a *single* defined cyclic core structure showing all rings therein, which are further functionalized by the R^1, R^2, as set forth in claims 67, 68, 70 and 71.

V. Claim 69, drawn to a chemical library comprising a plurality of metal ions, classifiable in class 600, subclass 617, for example.

VI. Claims **23** and **24**, drawn to a drug discovery process comprising mutagenesis of an amino acid residue involved in interaction with other than a metal ion, classified in class 435, subclass 7.1.

VII. Claim **25**, drawn to a drug discovery process for improving the binding affinity of a metal ion chelate, classified in class 435, subclass 7.1.

VIII. Claims **20, 22, 28, 29,** and **30**, drawn to a drug discovery process for determining an amino acid in the vicinity of a metal binding residue, classified in class 435, subclass 7.1.

IX. Claims **73-76** and **79**, drawn to uses of test compounds, classified in class 435, subclass 7.1.

X. Claims **77** and **78**, drawn to methods for characterizing an orphan receptor, classified in class 435, subclass 7.1.

The inventions are distinct, each from the other because of the following reasons:

1. The inventions of Group I and inventions of Group II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the additional step of mutating a biological target molecule so as to introduce at least one amino acid residue

capable of binding a metal ion may confer patentability upon the drug discovery processes of combination Group I, even though the drug discovery process of subcombination Group II comprising contacting the biological target molecule with a test compound might not be patentable. The subcombination has separate utility such as drug discovery by itself or in other combinations.

2. The inventions of Groups I and II and the inventions of Group III, VI-X are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions are not disclosed as capable of use together, and the drug discovery processes for identification of a small organic compound of Groups I and II are different modes of operation, function and effect from the process of identifying binding sites in or otherwise characterizing biological targets of Group III and a drug discovery process comprising mutagenesis of an amino acid residue involved in interaction with other than a metal ion, a drug discovery process for improving the binding affinity of a metal ion chelate, a drug discovery process for determining an amino acid in the vicinity of a metal binding residue, uses of test compounds, and methods for characterizing an orphan receptor, as in Groups VI-X, respectively.

3. The inventions of Group IV, etc., and the inventions of Groups I, II, III, and VI-X are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for

using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the processes of using of Groups I, II, and III can be practiced with another materially different product, such as compounds of the general Formulae II-XIII, as taught by the instant specification at pp. 29-34. Furthermore, the products as claimed in Group IV, etc., may be used for scavenging or titration metal ions in solution, which is a different process of using from drug discovery, identifying metal ion binding sites on biological target molecules or drug discovery process comprising mutagenesis of an amino acid residue involved in interaction with other than a metal ion, a drug discovery process for improving the binding affinity of a metal ion chelate, a drug discovery process for determining an amino acid in the vicinity of a metal binding residue, uses of test compounds, and methods for characterizing an orphan receptor, as in Groups I, II, III, and VI-X.

4. The invention of Group V and the inventions of Groups I, II, III and VI-X are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the process of using inventions of Groups I, II, and III can be practiced with another materially different product, such as compounds of the general Formulae I-XIII, as taught by the instant specification, pp. 27-34. Furthermore, the metal ion products as claimed

in Group V, etc., may be used for electroplating of metals, which is a different process of using from drug discovery, identifying metal ion binding sites on biological target molecules or a drug discovery process comprising mutagenesis of an amino acid residue involved in interaction with other than a metal ion, a drug discovery process for improving the binding affinity of a metal ion chelate, a drug discovery process for determining an amino acid in the vicinity of a metal binding residue, uses of test compounds, and methods for characterizing an orphan receptor, as in Groups I, II, III, and VI-X.

5. The inventions of Group IV, etc., and the inventions of Group V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions the specification does not disclose that the chemical libraries comprising a plurality of test compounds of the general formula I, as claimed in the inventions of Group IV, etc., and the chemical library comprising a plurality of metal ions as capable of use together. Furthermore, the library comprising a plurality of metal ions of Group V may be used in electroplating, which is a mode of operation, function and effect that is different from those of the libraries of test compounds. The instant specification, at p. 38, lines 5-26, and particularly line 19, differentiates between libraries of test compounds and metal ions, referring to "[l]ibraries of test compounds or of salt, solvates, or complexes of the above-mentioned metal ions . . . .[emphasis added]"

6. The inventions of claims 53-66 of Group I, etc., wherein library of test compounds are specifically defined as to F, G, X, n, Y, m, R', Z, e, V, f, W, g, A, B, T, Q, d, f, h, P, s, t, r, u, and/or formulae IIIA-XIc, are test compounds with structurally distinct core structures and so are unrelated each to the other. Test compounds with structurally distinct core structures are thus deemed to normally constitute independent and distinct inventions within the meaning of 35 U.S.C. 121. Absent evidence to the contrary, test compounds with structurally distinct core structures are presumed to represent independent and distinct inventions, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37 CFR 1.1141 et seq. The examination of more than one structurally distinct core structure would now pose an undue burden on the Office.

7. The inventions of claims 67, 68, 70 and 71 of Group IV, etc., wherein library of test compounds are specifically defined as to F, G, X, n, Y, and m of formula I, are test compounds with structurally distinct core structures and so are unrelated each to the other. Test compounds with structurally distinct core structures are thus deemed to normally constitute independent and distinct inventions within the meaning of 35 U.S.C. 121. Absent evidence to the contrary, test compounds with structurally distinct core structures are presumed to represent independent and distinct inventions, subject to a restriction requirement pursuant to 35 U.S.C. 121 and 37 CFR 1.1141 et seq. The examination of more than one structurally distinct core structure would now pose an undue burden on the Office.

8. Because these inventions are distinct for the reasons given above and it is necessary to search for each one of the distinct subjects in places where no pertinent art to each of the other subject exists, restriction for examination purposes as indicated is proper. MPEP 808.02.

9. Applicant is advised that a reply to this requirement, in order to be responsive, must include an identification of the elected Group, and **a listing of all claims readable thereon**, including any claims subsequently added. This is particularly the case with **Groups I, etc.**, and **IV, etc.**

10. For a Reply to this requirement to be complete for search purposes, applicants should provide the ***chemical structure of the elected compound Group***, wherein each specific formula *core structure* of the above identified elected genus is defined, preferably by picture, or by expressing the Group in terms of the variables of the structural formula.

Election of Species

11. This application contains claims directed to the following patentably distinct species of the claimed invention: A drug discovery process where the metal ion binding site is introduced at or in the vicinity of 1) a site where the binding of the test compound will interfere with the binding to another protein; 2) a site where the binding of the test compound will interfere with the cellular targeting of the protein; and so on (see claim 16).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 16 is generic.

12. This application contains claims directed to the following patentably distinct species of the claimed invention: A drug discovery process where binding is determined using changes in the biological activity of the protein, competition with binding of a labelled ligand of the protein or using a metal ion chelator which is in itself detectable or using a test compound labelled with a detectable labelling agent.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 21, 23, 27, and 29 are generic.

13. This application contains claims directed to the following patentably distinct species of the claimed invention: biological target molecules that protein, nucleoproteins, glycoproteins, orphan receptors, nucleic acids, carbohydrates, and glycolipids, and so on (see claim 31).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 31 is generic.

14. This application contains claims directed to the following patentably distinct species of the claimed invention: a drug discovery process where the target molecule is a membrane receptor, signal transduction protein, scaffolding protein, etc. (see claim 32).

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 32 is generic.

15. This application contains claims directed to the following patentably distinct species of the claimed invention: A membrane protein, for example, transmembrane protein with 1 domain, with 2 domains, with 3 domains, etc, tyrosine kinase receptor, purinergic ion channel, ligand-gated ion channel, nicotinic acetylcholine receptor, potassium channel, TIM receptor, G-protein coupled receptor and so on, GABA transporter, multidrug resistance protein, P-glycoprotein, NCAM, adenylyl cyclase, orphan receptor, etc.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species of membrane protein for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 33-46 are generic.

16. This application contains claims directed to the following patentably distinct species of the claimed invention: A drug discovery process wherein the

test compound has a log K value from about 3 to about 15, from about 3 to about 12, from about 4 to about 10, and so on.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 53 is generic.

17. This application contains claims directed to the following patentably distinct species of the claimed invention: A drug discovery process where a metal ion is Co, Cu, Ni, etc.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 54 is generic.

18. This application contains claims directed to the following patentably distinct species of the claimed invention: a test compound has at least two heteroatoms, similar different, that are N, O, S, Se or P.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 55 is generic.

19. This application contains claims directed to the following patentably distinct species of the claimed invention: A drug discovery process where the test compound comprises R1 and R2, which are the same or different, are radicals

consisting of hydrogen, a C1-C15 alkyl, C2-C15 alkenyl, and so on, and where R' is hydrogen, alkyl, substituted alkyl, and so forth, (see claim 56), and wherein R3 R4, R5 have the same meaning as R1 and/or R2.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 56-62 are generic.

20. This application contains claims directed to the following patentably distinct species of the claimed invention: A drug discovery process where the metal ion binds to an amino acid residue containing a S, O, N, Se, and / or P or an aromatic amino acid residue.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 63 is generic.

21. This application contains claims directed to the following patentably distinct species of the claimed invention: A drug discovery process where the amino acid residue is Ser, Lys, Arg, etc.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 64 is generic.

22. This application contains claims directed to the following patentably distinct species of the claimed invention: A drug discovery process where the metal ion is aluminium, antimony, arsenic, etc.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 65 is generic.

23. This application contains claims directed to the following patentably distinct species of the claimed invention: A drug discovery process where the test compound that is a chelate that is metal ion-phenanthroline complex, metal ion-bipyridyl complex, etc.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claim 66 is generic.

24. Claims 67 and 68 are generic to a plurality of disclosed patentably distinct species comprising R^1 and R^2, which are the same or different, are radicals selected from the group consisting of: hydrogen, C_1-C_{15} alkyl, C_2-C_{15} alkenyl, C_2-C_{15} alkynyl, aryl, cycloalkyl, alkoxy, ester, -OCOR', -COOR', heteroalkyl, heteroalkenyl, heteroalkynyl, heterocycloalkyl, heterocycloalkenyl, heterocycloalkynyl or heteroaryl group, an amine, imine, nitro, cyano, hydroxyl, alkoxy, ketone, aldehyde, carboxylic acid, thiol, amide, sulfonate, sulfonic acid, sulfonamide, phosphonate, phosphonic acid group or a combination thereof,

optionally substituted with one or more substituents selected from the same group as R^1 and / or a halogen such as F, Cl, Br or I; R' is hydrogen, alkyl, substituted alkyl, alkenyl, substituted alkenyl, alkynyl, substituted alkynyl, aryl, substituted aryl, arylalkyl, substituted arylalkyl, heteroalkyl, substituted heteroalkyl, heteroalkenyl, substituted heteroalkenyl, heteroalkynyl, heteroaryl, substituted heteroaryl, cycloalkyl, substituted cycloalkyl, cycloalkenyl, substituted cycloalkeny, heterocycloalky, substituted cycloalkyl, cycloalkenyl, substituted cycloalkenyl, heterocycloalkyl, substituted heterocycloalkyl, heterocycloalkenyl, or substituted heterocycloakenyl; R^1 and / or R^2 optionally forming a fused ring together with any of F, $(X)_n$ or a part of $(X)_n$, G, $(Y)_m$ or a part of $(Y)_m$ or R^1 and R^2 themselves forming a fused ring; X and Y are the same or different and have the same meaning as R' such as, CH_2-, -CH_2-CH_2-, -CH_2-S-CH_2-, -CH_2-N- CH_2-, -CH=CH-CH=CH-, -$(CH_2)_d$-$(Z)_e$-$(V)_f$-$(W)_g$-$(CH_2)_h$, -CH_2-O-CH_2, wherein each of Z and W are independently C, S, O, N, Se or P and V is –CH- or –CH_2-; e and /or g are an integer of 1-3, d, f and /or h are an integer of 1-7. It is evident that R^1 and R^2 may be defined, in part, by applicant's elective definitions for F, G, X, n, Y, and m; these elective definitions will be carried over into the instant election of species, according to the limitations of the claim. It is again noted that this election of species is different from the above restriction requirement for a test compound core structure, should an invention of Group IV, etc., be elected. The instant species requirement set forth here is to elect a species of R^1 and R^2 in order to search. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed.

25. Claims 67 is generic to a plurality of disclosed patentably distinct species comprising a test compound that is chelated to a metal ion or atom that is selected from the group consisting of aluminium, antimony, arsenic, astatine, barium, beryllium, bismuth, boron, cadmium, calcium, cerium, cesium, chromium, cobalt, copper, dysprosium, erbium, europium, gadolinium, gallium, germanium, gold, hafnium, holmium, indium, iridium, iron, lanthanum, lead, lutetium, magnesium, manganese, mercury, molybdenum, neodymium, nickel, niobium, osmium, palladium, platinum, polonium, praseodymium, promethium, rhenium, rhodium, rubidium, ruthenium, samarium, scandium, selenium, silicon, silver, strontium, tantalum, technetium, tellurium, terbium, thallium, thorium, thulium, tin, titanium, tungsten, vanadium, ytterbium, yttrium, zinc, zirconium, and oxidation states and isotopes thereof; in particular aluminium, antimony, barium, bismuth, calcium, chromium, cobalt, copper, europium, gadolinium, gallium, germanium, gold, indium, iron, lutetium, manganese, magnesium, nickel, osmium, palladium, platinum, rhenium, rhodium, rubidium, ruthenium, samariurn, silver, strontium, technetium, terbium, thallium, thorium, tin, yttrium, zinc, and oxidation states or isotopes thereof; in particular cobalt, copper, nickel, platinum, ruthenium, and zinc, and oxidation states and isotopes thereof, preferably calcium (II), cobalt (II) and (III), copper (I) and (II), europium (III), iron (II) and (III), magnesium (II), manganese (II), nickel (II) and (III), palladium (II), platinum (II) and (V), ruthenium (II), (III), (IV), (VI) and (VIII), samarium (III), terbium (III), zinc (II), or isotopes thereof, preferably cobalt (II) and (III), copper (I) and (II), nickel (II) and (III), zinc

(II) and platinum (II) and (V), or isotopes thereof. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed.

26. Claim 69 is generic to a plurality of disclosed patentably distinct species comprising a plurality of metal ions selected from the group consisting of aluminium, antimony, arsenic, astatine, barium, beryllium, bismuth, boron, cadmium, calcium, cerium, cesium, chromium, cobalt, copper, dysprosium, erbium, europium, gadolinium, gallium, germanium, gold, hafnium, holmium, indium, iridium, iron, lanthanum, lead, lutetium, magnesium, manganese, mercury, molybdenum, neodymium, nickel, niobium, osmium, palladium, platinum, polonium, praseodymium, promethium, rhenium, rhodium, rubidium, ruthenium, samarium, scandium, selenium, silicon, silver, strontium, tantalum, technetium, tellurium, terbium, thallium, thorium, thulium, tin, titanium, tungsten, vanadium, ytterbium, yttrium, zinc, zirconium, and oxidation states and isotopes thereof; in particular aluminium, antimony, barium, bismuth, calcium, chromium, cobalt, copper, europium, gadolinium, gallium, germanium, gold, indium, iron, lutetium, manganese, magnesium, nickel, osmium, palladium, platinum, rhenium, rhodium, rubidium, ruthenium, samariurn, silver, strontium, technetium, terbium, thallium, thorium, tin, yttrium, zinc, and oxidation states or isotopes thereof; in particular cobalt, copper, nickel, platinum, ruthenium, and zinc, and oxidation states and isotopes thereof, preferably calcium (II), cobalt (II) and (III), copper (I) and (II), europium (III), iron (II) and (III), magnesium (II), manganese (II), nickel

(II) and (III), palladium (II), platinum (II) and (V), ruthenium (II), (III), (IV), (VI) and (VIII), samarium (III), terbium (III), zinc (II), or isotopes thereof, preferably cobalt (II) and (III), copper (I) and (II), nickel (II) and (III), zinc (II) and platinum (II) and (V), or isotopes thereof. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species, even though this requirement is traversed.

27. This application contains claims directed to the following patentably distinct species of the claimed invention: A chemical library where the molecular weight of the individual test compound is at the most 2000, 1500, 1000, 500, and where log P is at most, 7, 6, etc., the number of hydrogen bond donors is at most 10, 8, etc., and the number of hydrogen bond acceptors is at most, 15, 13, 12, etc.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 70 and 71 are generic.

28. Applicant is advised that in order for a reply to this requirement to be responsive, applicant must include an identification of the species that is elected consonant with this requirement, and **a listing of all claims readable thereon**, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

29. For this response to be complete for search purposes, applicants should provide the ***chemical structure of elected compounds species***, wherein each specific formula substituents of each of the above identified elected species are defined either by picture, or by expressing the species in terms of the variables of the formula. Thus, applicant should furnish the structure of the genus to be searched, consonant with the restriction requirement as set forth above for Groups I, etc., and IV, etc., and a structure of the particular species, as set forth in the instant requirement for election of species, from which the search will initiate.

30. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

31. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Conclusion

32. Claims 1-79 are subject to restriction/election of species.

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Shibuya whose telephone number is (571) 272-0806. The examiner can normally be reached on M-F, 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on (571) 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mark L. Shibuya
Examiner
Art Unit 1639

ms

ANDREW WANG
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600